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[54] METHOD AND APPARATUS FOR PROVIDING SIGNAL SYNCHRONIZATION IN A SPREAD SPECTRUM COMMUNICATION SYSTEM

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[52] **U.S. Cl.** **375/1**; 380/34; 375/106; 375/115; 375/116

[58] **Field of Search** 375/1, 106, 111, 113, 375/115, 116; 380/34

[56] **References Cited**

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[57] **ABSTRACT**

A method and apparatus is provided for synchronizing a spread spectrum communication site. The communication site receives a spread message signal from over a radio communication channel. Subsequently, the communication site synchronizes the received spread message signal with an estimate of the received spread message signal. The estimated received signal is a function of a predetermined message signal and a predetermined spreading code. The received and the estimated received spread message signals are synchronized by using a sliding correlator to incrementally increase the phase shift between the received and the estimated received spread message signal until the received and the estimated received spread message signals are synchronized. The communication site limits the increase of the phase shift between the received and the estimated received spread message signal to a predetermined maximum phase shift magnitude which is derived from known operating environment parameters of the spread spectrum communication site.

32 Claims, 2 Drawing Sheets